

## Course Syllabus

|                                  |  |
|----------------------------------|--|
| <b>Name of institution</b>       | Mahidol University   |
| <b>Campus/faculty/department</b> | Salaya campus<br>Mahidol University, Faculty of Science<br>School of Sustainable Bioinnovation |

### Section 1 General Information

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#### 1. Course code and course title

|         |  |
|---------|--|
| Thai    | วททว ๑๐๒ การคิดเชิงวิจารณ์และการตัดสินใจ       |
| English | SCIN 102 Critical Thinking and Decision Making |

#### 2. Number of credit

3 (3-0-6)

(Lecture 3 hours – Laboratory 0 hour/week – Self-Study 6 hours/ week)

#### 3. Curriculum and type of subject

Required specific course as general education for Bachelor of Science Programme in Bioinnovation

#### 4. Responsible faculty member

##### 4.1 Responsible professor

Assoc. Prof. Wannapong Triampo, Ph.D.

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272 Rama VI Road, Ratchathewi District, Bangkok 10400, THAILAND  
Tel. 02-201-5770-1 e-mail: wannapong.tri@mahidol.edu

##### 4.2 Course lecturers

Assoc. Prof. Wannapong Triampo, Ph.D.

Address: Department of Physics, Faculty of Science, Mahidol University  
272 Rama VI Road, Ratchathewi District, Bangkok 10400, THAILAND  
Tel. 02-201-5770-1 e-mail: wannapong.tri@mahidol.edu

#### 5. Semester / year of study

5.1 Semester Semester 2 / Year of study 1<sup>st</sup> year

6. Pre-requisites None

7. Co-requisites None

8. Venue of study SC1-153 Faculty of Science, Mahidol University, Salaya campus

9. Date of latest revision 17 Jan 2019

## Section 2 Goals and Objectives \_\_\_\_\_

### 1. Course learning outcomes (CLOs)

At the end of course, the students can

- 1.1 Explain how critical thinking and decision making can play role in leaning and living.
- 1.2 Discuss on the case studies or situations in the context of critical thinking and decision making.
- 1.3 Apply critical thinking and decision making in solving problem and/or daily life and learning.

### 2. Objectives of development/revision

To propose the new program.

## Section 3 Course Management \_\_\_\_\_

### 1. Course descriptions

กระบวนการคิด การใช้เหตุผลเชิงยุทธวิธี การคิดเชิงวิจารณ์ฐาน การตัดสินใจ การแก้ปัญหา การประยุกต์ใช้การคิดเชิงวิจารณ์ฐานและการตัดสินใจสำหรับการเรียนรู้ การประยุกต์ใช้การคิดเชิงวิจารณ์ฐานและการตัดสินใจสำหรับการดำรงชีวิต

Thinking, logical reasoning, critical thinking, decision making, problem solving, applications of critical thinking and decision making for learning, applications of critical thinking and decision making for living.

#### Credit hours / trimester

| Lecture (Hours)                  | Additional class (Hours) | Laboratory/field trip/internship (Hours) | Self- study (Hours)            |
|----------------------------------|--------------------------|--|--------------------------------|
| 45 hours<br>(3 hours x 15 weeks) | -                        |  | 90 hours<br>(6 hour/ 15 weeks) |

### 2. Number of hours that the lecture provides individual counseling and guidance

2 hour / week or student requirement during prescribed date and time

## Section 4 Evaluation Plan \_\_\_\_\_

| CLO | Teaching method   | Assessment method   | Week                  | Percentage |
|-----|---|---|-----------------------|------------|
| 1.  | Lecture<br>Project & Problem-based learning<br>Group discussion               | - Midterm   | Throughout the course | 10%        |
|     |   | - Final examination   |                       | 15%        |
|     |   | - Class attendance, Class participation and behavior in class |                       | 5%         |
| 2.  | Lecture<br>Project & Problem-based learning<br>Group discussion<br>Case study | - Midterm   | Throughout the course | 10%        |
|     |   | - Final examination   |                       | 15%        |
|     |   | - Class attendance, Class participation and behavior in class |                       | 10%        |
| 3.  | Project-based learning<br>Oral presentation,<br>Group discussion              | - Class project executed without plagiarism                   | Throughout the course | 35%        |

Tentative grading criterion:

|    |   |        |    |   |          |
|----|---|--------|----|---|----------|
| A  | = | 86-100 | C  | = | 40-49    |
| B+ | = | 70-85  | D+ | = | 30-39    |
| B  | = | 60-69  | D  | = | 20-29    |
| C+ | = | 50-59  | F  | = | Below 20 |

## Section 5 Teaching and Evaluation Plans

Classes begin Monday 14 January 2019

Mid-term examination Monday 11- Friday 15 March 2019

Classes end Friday 10 May 2019

Final examination Monday 13- Friday 24 May 2019

Second semester end Monday 27 May 2019

### 1. Teaching plan

| Week           | Topic   | Hours   |            |            | Teaching methods/<br>multimedia                           | Instructor                         |
|----------------|---|---------|------------|------------|---|------------------------------------|
|                |   | Lecture | Laboratory | Self-study |   |                                    |
| 1<br>Jan 17    | Introduction of course discipline and class orientation.<br>What is thinking?<br>What is critical thinking? | 3       | 0          | 6          | Think-Pair-Share<br>Game based learning<br>Active lecture | Assoc Prof<br>Wannapong<br>Triampo |
| Jan 24         | What is decision making?<br>Why is it important?<br>How can we become a good decision maker?                | 3       | 0          | 6          | Brain storming<br>Group discussion<br>Active lecture      | Assoc Prof<br>Wannapong<br>Triampo |
| 3<br>Jan<br>31 | Activities for promoting critical thinking skills.  | 3       | 0          | 6          | Game based learning<br>Group discussion                   | Assoc Prof<br>Wannapong<br>Triampo |
| 4<br>Feb 7     | Critical thinking and problem solving I.  | 3       | 0          | 6          | Problem based learning<br>Group discussion                | Assoc Prof<br>Wannapong<br>Triampo |
| 5<br>Feb<br>14 | Critical thinking and problem solving II.   | 3       | 0          | 6          | Problem based learning<br>Group discussion                | Assoc Prof<br>Wannapong<br>Triampo |
| 6<br>Feb<br>21 | Case studies for promoting critical thinking skills I.  | 3       | 0          | 6          | Case based learning<br>Group discussion                   | Assoc Prof<br>Wannapong<br>Triampo |
| 7<br>Feb<br>28 | Case studies for promoting critical thinking skills II.   | 3       | 0          | 6          | Case based learning<br>Group discussion                   | Assoc Prof<br>Wannapong<br>Triampo |
| 8<br>Mar<br>7  | Mini project on critical thinking I.  | 3       | 0          | 6          | Project based learning                                    | Assoc Prof<br>Wannapong<br>Triampo |
| 9<br>Mar<br>14 | <b>Midterm examination</b>  |         |            |            |   | Assoc Prof<br>Wannapong<br>Triampo |

| <b>Week</b>       | <b>Topic</b>                                   | <b>Hours</b> |   |    | <b>Teaching methods/</b>                              | <b>Instructor</b>                  |
|-------------------|--|--------------|---|----|---|------------------------------------|
| 10<br>Mar<br>21   | Mini project on critical Thinking II.          | 3            | 0 | 6  | Project based learning                                | Assoc Prof<br>Wannapong<br>Triampo |
| 11<br>Mar<br>28   | From critical thinking to leadership           | 3            | 0 | 6  | Active Lecture,<br>Game-based learning                | Assoc Prof<br>Wannapong<br>Triampo |
| 12<br>April<br>4  | From critical thinking to leadership II        | 3            | 0 | 6  | Active Lecture,<br>Game-based learning                | Assoc Prof<br>Wannapong<br>Triampo |
| 13<br>April<br>11 | Critical thinker and career link I             | 3            | 0 | 6  | Active Lecture, Problem-<br>based learning            | Assoc Prof<br>Wannapong<br>Triampo |
| 14<br>April<br>18 | Critical thinker and career link II            | 3            | 0 | 6  | Active Lecture, Problem-<br>based learning            | Assoc Prof<br>Wannapong<br>Triampo |
| 15<br>April<br>25 | Critical thinking for changing world           | 3            | 0 | 6  | Active Lecture, Project-<br>based learning discussion | Assoc Prof<br>Wannapong<br>Triampo |
| 16<br>May<br>2    | Critical thinking for learning and daily life. | 3            | 0 | 6  | Active Lecture, Project-<br>based learning            | Assoc Prof<br>Wannapong<br>Triampo |
| 17<br>May<br>16   | <b>Final examination</b>                       |              |   |    |   | Assoc Prof<br>Wannapong<br>Triampo |
|                   | <b>Total hours</b>                             | 45           | 0 | 90 |   |                                    |

## **Section 6 Teaching Materials and Resources**

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### **1. Texts and main documents**

1. Alec Fisher (2001) *Critical Thinking: An Introduction*, Cambridge University Press
2. Theodore Schick Jr (2005) *How to Think about Weird Things: Critical Thinking for a New Age*, McGraw-Hill Humanities/Social Sciences/Languages

### **2. Documents and recommended information**

- Richard W. Paul, Linda Elder (2013) *Critical Thinking: Tools for Taking Charge of Your Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life*, Pearson FT Press
- The Critical thinking Community - <http://www.criticalthinking.org/pages/defining-critical-thinking/766>

### **4. Recommended background**

Science, technology, learning